Curriculum Innovation And Sustainable Development In Nigeria Education

Dr. Taiwo Ebenezer ADELEKE[1] , Busayo, Bose ADELEKE[2] and Dr Mandu S. UMOREN [3]

[1]Department of Curriculum Studies, Educational Management and Planning, University of Uyo, Uyo, Nigeria.
adeleketaiwo97@gmail.com

[2]Department of Arts and Social Science Education University of Ibadan, Ibadan, Nigeria adelekebusayo97@gmail.com

3 Department of Curriculum Studies, Educational Management and Planning, University of Uyo, Uyo, Nigeria

Abstract: This study examined curriculum innovation and sustainable development in Nigeria Education. It examines the impact of curriculum in achieving sustainable development goals for enhanced national development in education. The study discussed the concept of curriculum innovation, Concept of Curriculum innovation in Nigeria,- types of Curriculum innovation in Nigeria Education, reasons for curriculum innovation in Nigeria Education, problems of curriculum innovation for a sustainable education in Nigeria and prospects of curriculum innovation for a sustainable education in Nigeria. It examines if the curriculum used presently is able to cover up all academic areas and find out how to make improvement in the curriculum in other for sustainable development of the educational sector.

Keywords: curriculum, innovation, sustainable development, Nigeria

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Introduction

The word curriculum comes from the Latin word "currere," which means "race course," and refers to the series of actions and experiences that children go through as they grow into mature people. A school's or university's curriculum is the collection of courses and their contents. A curriculum is prescriptive and is based on a more basic syllabus that simply specifies which topics must be studied and to what level in order to obtain a specific grade or standard. In other words, a curriculum might relate to all of a school's courses. "Curriculum is all the learning that is organized and guided by the school, whether it is done in groups or individually, within or outside the school," Kelly (2003) says. In other words, curriculum lays out in advance what we want to accomplish and how we'll do it. Curriculum, according to Blenkin (2012), is a collection of knowledge topics and/or subjects. That is, curriculum is the process of transmitting or delivering knowledge and skills to learners using the most effective ways available. Curriculum is a well-organized course plan that outlines the objectives and learning experiences that will be used to attain these goals. It is a method of preparing individuals to become productive citizens and helpful members of the society to which they belong in a broader sense. The curriculum, according to a modern view, is all of a child's knowledge and experience gained within and outside of the school walls, on or off the timetable, i.e. the experiences the learner has regardless of when or how they occur.

Jeffs and Smith (2010) described the concept of curriculum as a major dividing line between formal and informal education. Recognizing that some informal educators adopted curriculum theory and practice in order to be more explicit about material, and that curriculum approaches that focus on objectives and comprehensive programs appear to be compatible with the learner's overall development. A plan of action or written document that includes techniques for accomplishing desired goals or ends is referred to as a prescriptive perspective of a curriculum. Curriculum ideas that were well-inattention have remained largely inactive and dysfunctional. As a result, half-baked, ill-trained, and occasionally confused graduates are produced by higher education graduates who are found to be grossly inadequate in practical and professional capabilities. All patriotic and serious-minded stakeholders in the educational sub-sector should be concerned about these and other related issues. In this context, we shall investigate Curriculum Innovation . And Its Impact On Long-Term Education In Nigeria.

Curriculum innovation serves as a catalyst for educational transformation and progress in Nigeria, a country facing diverse challenges in its education system. The need for dynamically adapting curriculum structures to align with evolving societal demands, technological advancements, and global trends has become more apparent than ever. This seminar seeks to delve into the realm of curriculum innovation in Nigerian education, examining its potential to bring about sustainable impacts and positive change.

Concept of Curriculum Innovation

Curriculum innovation is the introduction of new and improved practices and methods into how students are taught. It covers both planning and implementation and involves a wide range of actors that include learners, teachers, guardians, and education experts,, among others. Curriculum Innovation is a response to the fact that the world is constantly changing, and education has to change if we want to avoid preparing students for a world that no longer exists. If, in the complex context of business, innovation refers to the process by which a product or service is renewed or updated by applying new techniques or implementing new value-enhancing ideas (Innolytics) then, curriculum innovation can be defined as a process of updating or renewing the current curriculum, either through new techniques or implementing new value-enhancing education/schooling ideas. There is a strong and urgent need for innovation in the current curriculum.

Curriculum Innovation in Nigeria

The concept of curriculum innovation in Nigeria has been evolving since the country gained independence in 1960. In the early years of independence, the curriculum was heavily influenced by British educational models. However, as Nigeria developed its own unique identity and culture, there was a push for the curriculum to reflect this. As a result, the curriculum began to incorporate more Nigerian history and culture, as well as subjects that were relevant to the country's development. In recent years, there has been an increased focus on making the curriculum relevant to the needs of the 21st century, with a focus on skills such as critical thinking, problem-solving, and creativity. Curriculum innovation in Nigeria is seen as a process of continuous improvement that is driven by the country's changing needs and priorities. This includes factors such as economic and political changes, as well as technological and cultural shifts. The curriculum is also shaped by global trends, such as the need for students to be prepared for a rapidly changing world and the need for more intercultural understanding. The curriculum is also seen as a way to promote social cohesion and national unity, by creating a shared sense of identity and purpose among the country's diverse population.

It's also important to note that curriculum innovation in Nigeria is not just about what is taught in the classroom. It also includes the way that education is delivered, the infrastructure that supports it, and the policies that guide it. For example, there is a focus on improving teacher training, increasing access to technology, and creating a more inclusive and accessible educational system. There is also a recognition that curriculum innovation is not a one-time event, but an ongoing process that needs to be constantly reviewed and updated.

Curriculum Innovation process in Nigeria Education

Curriculum redesign, development, implementation, enrichment, and evaluation are essential elements of curriculum processes that aim to align education systems with societal, economic, and technological needs. These processes ensure a dynamic and responsive educational framework, fostering holistic development and sustainable societal progress.

1. Curriculum Redesign: Curriculum redesign involves revising the curriculum to better reflect the evolving needs of students, society, and the global community. This process may include overhauling subjects, teaching methods, and assessment strategies to improve educational outcomes. For example, in Nigeria, addressing the country's economic challenges requires a curriculum that integrates entrepreneurial and technical education to equip students with employable skills (*Nwogu & Igwe, 2023*). Curriculum redesign can also enhance critical thinking, innovation, and adaptability in learners (*Adebayo & Oladele, 2022*).

2. Curriculum Development: Curriculum development is the creation of instructional materials, including textbooks, lesson plans, and assessments. This process requires collaboration among educators, policymakers, and stakeholders to produce relevant content. For instance, UNESCO (2021) advocates for including sustainability topics in curriculum materials to prepare students for global environmental challenges. In Nigeria, the introduction of STEM-focused textbooks is an example of curriculum development aimed at promoting science and technology (*Okoro, 2021*).

3. Curriculum Implementation: Curriculum implementation involves introducing new or updated curricula into classrooms and equipping educators with the necessary training. Effective implementation ensures that changes translate into practical learning outcomes. However, challenges such as teacher resistance and inadequate resources often impede the process. Studies in Nigeria emphasize the need for robust teacher training and infrastructural support to facilitate curriculum implementation (*Nwachukwu et al., 2023*).

4. Curriculum Enrichment: Curriculum enrichment adds depth to the curriculum by including supplementary content and activities. This approach enhances students' learning experiences and fosters well-rounded development. For instance, enrichment programs may include co-curricular activities such as coding clubs, cultural exchange projects, or environmental conservation workshops. In Nigeria, integrating local culture and languages into the curriculum enriches students' understanding of their heritage while promoting cultural sustainability (*Akinyemi & Oyelowo, 2022*).

5. Curriculum Evaluation: Evaluation is the ongoing process of assessing curriculum effectiveness to ensure continuous improvement. This involves analyzing student performance, teacher feedback, and societal impacts. Effective evaluation mechanisms can identify gaps and inform necessary adjustments. For example, using digital tools to track learning outcomes has improved the evaluation process in some Nigerian schools (*Ojo et al., 2022*). Such practices ensure that the curriculum remains relevant and impactful.

Reasons for Curriculum Innovation in Nigeria

1. Relevance: The existing curriculum in Nigeria may not be relevant to the current needs of society, the job market, and global trends. Curriculum innovation is necessary to ensure that students are equipped with the knowledge and skills that are truly needed in today's world Ugbode and Adeleke (2021). This includes incorporating new subjects, technologies, and teaching methods that reflect the changing needs of society.

2. Quality of Education: Curriculum innovation is crucial for improving the quality of education in Nigeria. By updating and enhancing the curriculum, educators can ensure that students are receiving a well-rounded and high-quality education that prepares them for success in their future careers and lives. This includes focusing on critical thinking, problem-solving, creativity, and other 21st-century skills that are essential for success in today's knowledge-based economy.

3. Global Competitiveness: In order for Nigeria to compete effectively on a global scale, it is important that students are equipped with the knowledge and skills that are on par with international standards. Curriculum innovation can help ensure that Nigerian students are competitive in the global marketplace and can contribute to the country's economic development and growth.

4. Social and Cultural Relevance: Curriculum innovation can also help address social and cultural issues that are important in the Nigerian context. By incorporating culturally relevant content and teaching practices, educators can help engage students and make learning more meaningful and impactful for them.

5. Lifelong Learning: Lastly, curriculum innovation can help instill a culture of lifelong learning in students, where they are encouraged to continue learning and adapting to new challenges throughout their lives. By teaching students how to learn, think critically, and adapt to change, curriculum innovation can help prepare them for success in an ever-changing world.

Factors Affecting Curriculum Innovation in Nigeria Education

Several factors can influence curriculum innovation in Nigeria education, including:

1. Inadequate Funding: A lack of funding can affect the development and implementation of new curriculum materials, and make it difficult for adequate training to be provided for teachers.

2. Poor Teacher Training: To a large extent, the quality of students is determined by the quality of teachers. This also affects curriculum innovation .NYSC Portal

3. Lack of Political will: Incessant changes in government policies can hinder the implementation of curriculum innovation.

4. Resistance from the community: Stakeholders and members of the community who are not comfortable with change can make it difficult to implement new curriculum materials or teaching methods.

5. Restricted access to technology: Lack of digital resources can limit the ability to integrate technology into the curriculum.

6. Inadequate infrastructure: A lack of necessary facilities such as internet, classrooms, and libraries, can make it difficult to enforce new curriculum materials or methods.

7. Poor research and data: Inadequate data on the effectiveness of various curriculum materials can make it difficult to make better decisions.105 Good Morning Love Messages

8. Inadequate assessment: Inappropriate assessment methods make it difficult to measure the effectiveness of new curriculum teaching methods.

9. Socio-economic determinants: Socio-economic factors such as lack of parental care or poverty affect students' ability to benefit from curriculum innovation.

10. Cultural factors: Cultural factors like language differences can affect the implementation of a new curriculum.

Concept of Sustainable Education

The word sustainable education is like a new concept but is it really new? Sterling (2001) had a discussion on what was referred to as "new education Briefing " in that meeting discussants were not sure of what it was all about and the following ensured and I quote

"It was early 2001, I and the publisher of the Schumacher Briefings and I were having a chat in his office about the title of the new education Briefing had. I just made a bid for 'Sustainable Education'. His reply was along the lines: 'surely, you mean "education for sustainable development", or "education for sustainability" don't you? Are you implying "education that lasts?" - it doesn't make a lot of sense' No', I said, 'I don't want to call it education 'for' anything, and yes, 'Sustainable Education' is exactly the title I want'. The reason I went for this title, is that I wanted it to provoke a little cognitive dissonance and the question: 'what does that mean?' I wanted people to move from 'how do we educate for sustainable development' towards deeper attention to education itself: its paradigms, policies, purposes and practices (these are linked of course) and its adequacy for the age we find ourselves in"(Sterling 2001).

It is pertinent at this stage to defined the what sustainable education is all about. Sterling (2001) defined sustainable education as - "a change of educational culture, one which develops and embodies the theory and practice of sustainability in a way which is critically aware. It is therefore a transformative paradigm which values, sustains and realises human potential in relation to the need to attain and sustain social, economic and ecological well-being, recognising that they must be part of the same dynamic.

Corroborating this view GEF (2014) noted that nobody knows what sustainability education is all about .It's not defined in the traditional sense, and people around the globe are searching 'what is sustainability' for GEF Institute they tried to fill the gap on the definition and they came up to define sustainability education in a way that also defines the education they develop which is - Sustainability education utilizes applied learning models that connect real-world circumstances with the broader human concerns of environmental, economic, and social systems.

Sterling (2001) further noted that the concept of 'sustainable education', is a term which suggests not just a simple 'add-on' of sustainability concepts to some parts of the curriculum, but a cultural shift in the way we see education and learning. But that rather than just seeing it as a piecemeal, bolt-on, fragmentary response which leaves the mainstream otherwise untouched, it implies systemic change in thinking and practice, informed by what can be called more ecological thinking and values – essentially a new paradigm emerging around the poles of holism, systemic thinking, sustainability and complexity. This offers the possibility of education that is appropriate and responsive to the new systemic conditions of uncertainty and complexity that are reflected in the headlines every day; one that nurtures the increasingly important qualities of adaptability, creativity, self-reliance, hope and resilience in learners.

Sustainable education implies four descriptors: educational policy and practice which is sustaining, tenable, healthy and durable.

- • Sustaining: it helps sustain people, communities and ecosystems;

- • Tenable: it is ethically defensible, working with integrity, justice, respect and inclusiveness;

- •Healthy: it is itself a viable system, embodying and nurturing healthy relationships and emergence at different system levels;

- •Durable: it works well enough in practice to be able to keep doing it.(Sterling , 2008)

Sustainable Education in Nigeria

In Nigeria, as noted by the Federal Ministry of Education (2005) in the constitutional provisions, the main responsibilities of the Federal government in basic education are in the realm of policy formulation, coordination and monitoring. Direct control by the Federal government is preponderantly at the tertiary level. Only a handful of institutions at the secondary level (the Unity Schools and technical colleges) enjoy federal direct control. The bulk of secondary schools in the country are under the purview of state governments which are also directly responsible for a considerable proportion of the nation's tertiary institutions. Local governments have statutory managerial responsibility for primary education, with the federal and state governments exercising appropriate oversight functions. However there has recently been the issue of private individuals and cooperate bodies coming into the educational sector in Nigeria with a view of improving the quality of education in the country by bringing a lot of innovation to make education be what it is supposed to be (Adeleke and Adeleke 2024). This is because it has become evident that most of our graduate no longer fit into the emerging economy of the world with the traditional way of learning and that they must learn to think things differently, the above issue has giving raise to what is referred to as sustainable education. Education for sustainable

development aims at enabling everyone to acquire the values, competencies, skills and knowledge necessary to contribute to building a more sustainable society. This implies revising teaching content to respond to global and local challenges. It should also promote teaching methods that enable students to acquire skills such as interdisciplinary thinking, integrated planning, understanding complexity, cooperating with others in decision-making processes, and participating in local, national and global processes towards sustainable development.

Benefit of Sustainable Education in Nigeria

Sterling ,(2008) opined that it is quite unfortunate that , the term 'sustainable education', with a few welcome exceptions, has often been bundled in by writers as synonymous with 'sustainability education', 'education for sustainability' and 'education for sustainable development ', but they are not the same thing.
GEF (2014) opined that it is interesting to note that everyone is talking about green jobs[Decent jobs that contribute to preserve or restore the environment] and the new green economy. What about the education that gets you there? Or, what if you need to learn sustainability concepts to stay competitive in your current employment? Thus, GEF Institute has seen this type of education as that which incorporates hands-on learning strategies that make deep connections with what people are most familiar with in their homes, their workplace, and their communities with the outcomes become more meaningful and lasting. Summarily the benefit are as follows -

1. Developing critical minds: This type of education demands critical thinking, analytical writing, and multidimensional understanding that is often absent in traditional curriculum or training. These skills, developed by studying topics like energy technology or the economics of sustainability, and finally put people at an advantage in their workplace or in higher education classrooms.

2. Builds essential skills :Sustainability concepts can provide wonderful context for developing the skills of critical thinking, systems thinking, collaboration, and communication. A teacher who had incorporated sustainability lessons into his classroom noted that the nature of lessons on sustainability requires that students apply critical thinking skills and that they draw from their own experiences and world knowledge. The interactive characteristic of the activities invites the participation of all students." Because sustainability discussions involve current affairs and often complex global connections, the material can be used as a starting point for critical thinking exercises as students consider the many facets of an issue. Climate change is a great example of this, as it involves both science and related complex social and economic issues.

3. Transformational and Lasting change: The above terms represent worthy developments but do not necessarily connote the need for deep change in educational values, assumptions and practices. In response to the crisis of unsustainability, most educators – and increasingly, politicians - will ask 'what learning needs to take place amongst students?'. This is a perfectly valid and important question, but it begs a prior and deeper question: what changes, and what learning needs to take place amongst policymakers, amongst senior management, amongst teachers, lecturers, support staff, amongst parents, amongst employers, etc., so that education itself can be more transformative and appropriate to our times? Hence we need a change that will affect the system as a whole.

4. Developed citizens: According to Wiese (2009) quoting Debra Rowe on the benefit of Sustainable Education noted that and i quote "Through incorporating education for sustainability into your classroom, you are helping your students create a more healthy, habitable and equitable world by helping them become active citizens." Wiese (2009) emphasised that teaching Sustainability Concepts has benefited his students in that whether they think of environmental, economic, sociological, or religious issues when conversations about living sustainably arise, it remains clear that sustainability is an important albeit complex topic of discussion for the educational community. By embracing environmental sustainability as a vital topic within the classroom, students internalize the importance of a high quality of life through:
• Expanding awareness of how to create a healthier and more equitable world for all beings.
• Encouraging creative problem solving through hands-on experimentation.
• Stimulating ownership and responsibility in your students' personal and everyday actions as well as their social actions & decisions within their community.

• Empowering students to evaluate their actions and helping them make more consistent decisions that benefit all beings.
• Increasing critical thinking skills and deep problem solving by using cyclical reasoning and real-world examples to better understand class subject matter.

5. Bringing about a deeper change: There is a need for change which will involve a re-examination of assumptions - towards a shift of consciousness, a changed intelligence which is both connective and collective. This is a deeper and systemic learning response, which needs to happen in three areas: personal, organisational and the community (social learning beyond formal education). The

most resistant area is change in the institution and organisation but this is being squeezed by growing awareness of individuals at one level; and evident shifts in social values and behaviors at the level of community and public debate.

6. Improving students' performance: Improves student engagement in learning distracted students are non-learning students; student engagement in learning is a key to academic success. We've seen that real-world sustainability issues can engage students in a way that other topics or contexts do not. While there is no hard data linking improved test scores to sustainability programming, there are reports that that link student engagement to improved academic performance. It has been shown that using student engagement has improve adolescent literacy (Learning Point Institute, North Central regional educational Laboratory 2005):

7. Developing a change that will lead to learning about learning' process: Sterling (2008) noted that the change will envision and take realisable, practicable steps in our own contexts. In essence, what we all are engaged in here is a critically important change order 'learning about learning' process; one which will directly affect the chances of a more sustainable future for all. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) report also pointed out that in (2002), just as we have learnt to live unsustainably, we now need to learn how to live sustainably. Such learning for respons-ibility requires educational systems, institutions and educators to develop response-ability – that is, the competence and will to address the considerable challenge and opportunity that sustainability presents. Finally they reported that this is the context of bases for any meaningful discussion about the role of education in the 21st century.

9. Connects students to real life issues: One of the benefits of sustainable education is that it connects students to their community and inspires active citizenship. In an annual teacher survey conducted on students, thus assessing their knowledge, beliefs, and behavior before and after learning about global sustainability in their classrooms. The result shows that there was a drastic improvement on the student's attitude. And worldviews after participating in global sustainability programming in their classrooms. Below are some quotes by some students

"I used to say I wanted to make a difference when I grow up. After this [global sustainability unit] I realize that I can make a difference right now."

"I think more about the world and what my purpose is in it."
"It made me think about what is happening in the world and how much the way I live is
affecting it. This unit really changed my insight on life and it really makes me want to try to do something."

10. Prepares students for challenges of the 21st Century: Another benefit of sustainable education is that it prepares students for challenges of the 21st Century. These reasons are not farfetched because of the usefulness of this concept. Therefore, this is the reason while many sustainability educators would put as foremost motivation to teach global sustainability. In fact, this is why many educators enter the teaching profession in the first place.

Curriculum Innovation as a Tool for Sustainable Education in Nigeria

Curriculum innovation is increasingly recognized as a vital strategy for achieving sustainable education in Nigeria. By rethinking and reshaping educational content and methodologies, curriculum innovation can address the evolving needs of society and the economy, promote environmental stewardship, and foster social equity. Current authors highlight various dimensions and implications of curriculum innovation for sustainable education in Nigeria.

1. Adapting to Technological Advancements

Oye, Iahad, and Madar (2022) emphasize the importance of integrating Information and Communication Technology (ICT) into the Nigerian curriculum. They argue that technology enhances learning experiences and equips students with essential digital skills for the future workforce. The authors recommend a hybrid model that combines traditional teaching methods with digital tools to create an interactive and engaging learning environment.

2. Promoting Critical Thinking and Problem-Solving

Adegoke and Osisanya (2023) advocate for curriculum innovation that fosters critical thinking and problem-solving skills. They highlight the success of inquiry-based learning approaches in Nigerian schools, where students are encouraged to explore, ask questions, and develop solutions to real-world problems. This method not only improves cognitive skills but also prepares students to address complex societal issues.

3. Inclusivity and Equity

Uche and Adeyemi (2023) discuss the role of curriculum innovation in promoting inclusivity and equity in Nigerian education. They point out that traditional curricula often overlook the needs of marginalized groups, including students with disabilities and those from low-income backgrounds. The authors suggest that a more inclusive curriculum, designed with input from diverse stakeholders, can help bridge these gaps and provide equal learning opportunities for all students.

4. Environmental Awareness and Sustainability

Eze and Okafor (2022) highlight the integration of environmental education into the Nigerian curriculum as a critical step towards sustainability. They describe initiatives where students learn about renewable energy, waste management, and conservation practices. According to the authors, hands-on projects, such as school gardens and recycling programs, instill a sense of environmental responsibility and promote sustainable living from a young age.

5. Cultural Relevance and National Identity

Nwosu and Njoku (2023) argue for a curriculum that reflects Nigeria's rich cultural heritage and diversity. They believe that incorporating local content and indigenous knowledge systems into the curriculum can foster a sense of national identity and pride. At the same time, they advocate for exposing students to global perspectives to prepare them for participation in a globalized world.

6. Teacher Training and Professional Development

Adeoye and Olaniyan (2023) stress the importance of continuous professional development for teachers in the context of curriculum innovation. They argue that effective implementation of innovative curricula depends on teachers' ability to adapt to new content and teaching methods. The authors recommend regular training programs and collaborative networks that enable teachers to share best practices and stay updated with educational trends.

Challenges of curriculum Innovation

Despite the potential benefits, current authors acknowledge several challenges in implementing curriculum innovation in Nigeria:

- Funding Constraints: Akpan and Ekpo (2022) note that inadequate funding hampers the development and implementation of innovative curricula. They call for increased investment from both government and private sectors.

- Resistance to Change: Bello and Ibrahim (2023) highlight resistance from educators and institutions accustomed to traditional teaching methods. They suggest involving all stakeholders in the innovation process to ensure buy-in and smooth implementation.

- Infrastructure Deficits: Chukwu and Udeh (2022) point out the lack of adequate infrastructure, such as ICT facilities and laboratories, as a significant barrier. They recommend a phased approach to infrastructure development, prioritizing the most critical needs.

Impacts of Curriculum Innovation on the Nigerian Educational System

Curriculum innovation has been instrumental in transforming Nigeria's educational system, aligning it with global standards and addressing local needs. The specific impacts are:

1. Increased Focus on Accountability: Curriculum innovation has emphasized the importance of monitoring and evaluating student learning outcomes. This focus ensures the curriculum meets students' needs and achieves its intended goals. Olaniyan and Adebayo (2021) found that the introduction of outcome-based education models in Nigeria has led to improved transparency in measuring student progress and holding educators accountable for results. Similarly, Akinbode et al. (2020) observed that accountability frameworks introduced through curriculum reforms help maintain consistency in teaching and learning standards, particularly in secondary schools.

2. Greater Emphasis on Teacher Training and Professional Development: Innovative curricula necessitate that teachers are well-equipped to deliver updated content effectively. Ojo and Akintola (2022) reported that curriculum changes in Nigeria have resulted in increased teacher training programs aimed at improving pedagogical skills. Professional development workshops now focus on active learning strategies, integration of technology, and contextual teaching methods. This shift has enhanced teacher quality and student engagement, as also noted by Nwachukwu and Onyekwere (2021).

3. Increased Use of Technology in Classrooms: The integration of digital tools like computers, tablets, and learning management systems into classrooms has been a notable outcome of curriculum innovation. Research by Ajibola and Odumuyiwa (2022) highlights that technology-driven curricula improve access to educational resources and foster interactive learning environments. Rural schools, however, still face challenges in adopting these tools due to infrastructure limitations, as noted by Uche et al. (2023).

4. Shift to Hands-On, Project-Based Learning: Project-based learning methods have become prominent in Nigerian schools, allowing students to apply knowledge in meaningful, real-world contexts. For example, Okonkwo and Eze (2022) documented how schools incorporating agricultural and environmental projects into their curricula enhanced student critical thinking and problem-solving skills. This approach aligns with sustainable education goals, encouraging students to connect theoretical knowledge with practical applications.

5. Focus on Assessment for Learning: Innovative curricula prioritize *assessment for learning* (formative assessment) over *assessment of learning* (summative assessment). This shift has made evaluation processes more effective in identifying and addressing student learning gaps. According to Ibrahim and Bello (2023), continuous assessment strategies embedded in curriculum reforms provide actionable feedback, improving both teaching practices and student performance. Additionally, Adebayo (2021) noted that these assessments foster a learner-centered approach, where students are more involved in their learning journey.

Problems of Curriculum Innovation in Nigeria for A Sustainable Education

1) Lack of Stakeholders Engagement: One of the major challenges in curriculum innovation in Nigeria is the limited involvement of key stakeholders, including teachers, students, parents, and community members, in the curriculum development process. This lack of consultation can lead to the creation of curriculum that does not address the need and realities of the local context. Stakeholders engagement is critical for curriculum innovation as it ensures that the curriculum reflects the needs and aspirations of students, teachers, parents, and communities. When stakeholders are not actively involved in the curriculum development process, the resulting educational programs may lack relevance and fail to address local contexts and challenges.

2) Limited Resources and Funding: Another major issue is the inadequate funding and resources allocated to curriculum innovation initiatives in Nigeria. Without sufficient financial support, it is challenging to implement new educational programs, provide professional development for teachers and acquire necessary materials and technology. Moreover the sufficient funding and resources allocated to curriculum innovation initiatives in Nigeria undermine the effort to introduce new teaching methods, technologies, and updated content. This lack of financial support hampers the implementation of innovative educational practices that can enhance student learning outcomes and prepare learners for the demands of the 21st century.

3) Resistance to change: Resistance to change among educators, policymakers, and other stakeholders can also impede curriculum innovation in Nigeria. Some may be hesitant to adopt new teaching methods or content due to fear of uncertainty or lack of adequate training and support. Resistance to change among educators, policymakers, and other stakeholders also poses a significant barrier to curriculum innovation. Without buy- in from key actors in the education system, the adoption of new curriculum frameworks and pedagogical approaches may be slow or ineffective, hindering the transformation of teaching and learning practices.

4) Inadequate Teachers Training: The lack of professional development opportunities for teachers in Nigeria poses a significant barrier to effective curriculum innovation. Teachers need ongoing training and support to effectively implement new teaching strategies and technology.

4.2 Prospects of Curriculum Innovation in Nigeria for Sustainable Education

1) Relevance: Curriculum innovation can ensure that the content of education is relevant to the needs of the society and the changing of global economy. This can help prepare students for job market demands, as well as equip them with skill and knowledge that are essential for contributing to the development of nation. By incorporating new emergency concept, technologies, and methodologies into the curriculum, educators can help students develop the skills and knowledge needed to thrive in a rapidly changing world. This includes Promoting critical thinking, creativity, communication, collaboration, and other essential 21st century skills that are increasingly important for success in the workforce and society.

2) Diversity: Curriculum innovation can promote diversity in education by incorporating different perspectives, cultures, and languages. This can help students develop a broader understanding of the world and promote inclusivity in education. Curriculum innovation can also help address diverse needs and interests of students and diversity in education, and ensure that educational programs aligned with national development goals and priorities.

3) Lifelong learning: Curriculum innovation can promote a culture of lifelong learning among students, encouraging them to continue learning and adapting to new challenges throughout their lives. This can help students remain competitive in the job market and contribute to the development of the nation.

Conclusion

In conclusion Curriculum innovation with it's impact has helped to develop Nigeria Educational system, it has brought about new changes to Nigeria Education. In the area of sustainable education, Nigeria educational system has a good standard, because the curriculum always changes, When the curriculum changes, new things will be introduced to the students and the teachers. Curriculum innovation has made great impact on Nigeria Educational system today. **Also,** authors agree that curriculum innovation is a powerful tool for achieving sustainable education in Nigeria. By adapting to technological advancements, promoting critical thinking, ensuring inclusivity, raising environmental awareness, and preserving cultural heritage, Nigeria can prepare its students for a sustainable future. Addressing challenges through increased investment, stakeholder engagement, and continuous teacher training will further enhance the impact of these innovations. The insights from recent research underscore the necessity of a dynamic and responsive educational system that can meet the needs of both present and future generations.

Recommendations

Based on the findings of the study, the following recommendations are profound

- Government should inject more funds in then educational sector.

- Develop a dynamic and inclusive curriculum that reflects the diversity of learners and their needs, ensuring relevance to their local context.

- Promote lifelong learning and skills development through a curriculum that emphasizes critical thinking, problem-solving, creativity, and collaboration to prepare students for the complexities of the 21st century.

- Government should integrate modern technologies and digital tools into the curriculum to enhance learning experience and prepare students for the digital age.

- Foster collaboration and partnerships between educational institutions, industries and the community to ensure that curriculum innovations align with current and future workforce demands.

REFERENCES

Adebayo, J., & Oladele, T. (2022). *Curriculum Innovations for Addressing Economic Challenges in Nigeria*.

Adebayo, O. (2021). *Transforming education in Nigeria through innovative assessment strategies*. African Educational Review, 23(4), 456-471.

Adebule, S. O., & Ogunleye, A.J. (2011). Curriculum innovation in Nigeria: The theoretical framework. International Journal of Educational Research,10(2), 36-42.

Adeleke, T.E. and Adeleke, B.B. (2024). Teachers Classroom Management and Students Academic Achievement in Selected Public Secondary School in Ibadan North Local Government Area, Oyo State. International Journal of Academic Management Science Research (IJAMSR). ISSN: 2643-900X Vol. 8 Issue 7 July - 2024, Pages: 304-311

Adesina, A .J. (2014). Curriculum innovation in Nigeria: Problems and prospect. International journal of Education and Research.

Adeyemi, T.O., Haq, M. S.,& Adejoke, A. j.(2014) Curriculum innovation for sustainable development in Nigeria.

Ajibola, M., & Odumuyiwa, T. (2022). *The role of technology in modern Nigerian education*. Journal of Digital Education in Africa, 9(3), 204-220.

Akinbode, T.l. (2020). *Outcome-based education and its implications for Nigerian schools*. Nigerian Journal of Educational Development, 15(2), 98-110.

Akinsola, M. K. (2015). Curriculum Development in Nigeria: The Need for Engaging Stakeholders. International Journal of Educational Administration, Planning, and Research.

Akinyemi, S., & Oyelowo, B. (2022). *Cultural Integration in Curriculum Development: A Nigerian Perspective*.

Chukwuma, C.O. (2013). Curriculum development in Nigeria: The need for curriculum innovation, Journal of Educational Development.

Ibrahim, A., & Bello, K. (2023). *Assessment for learning in Nigeria's curriculum reforms: Impacts and challenges*. Nigerian Journal of Pedagogical Innovations, 18(1), 112-130.

Nwachukwu, E., et al. (2023). *Challenges in Curriculum Implementation: The Nigerian Experience*.

Nwagbo, C. A. (2017) Curriculum development in Nigeria: The need for innovation in the 21st century.

Nwogu, J., & Igwe, O. (2023). *Education and Sustainable Development Goals in Nigeria*.

Ojo, A., & Akintola, F. (2022). *Professional development in the era of curriculum innovation in Nigeria*. Journal of Teacher Education in Africa, 14(3), 75-92.

Ojo, L., et al. (2022). *Digital Tools for Curriculum Evaluation in Sub-Saharan Africa*.

Okonkwo, E., & Eze, U. (2022). *Hands-on learning as a tool for sustainable education in Nigeria*. Educational Research and Development Journal, 22(5), 321-339.

Okoro, F. (2021). *STEM Education in Nigerian Schools: Current Trends and Future Directions*.

Olaniyan, A., & Adebayo, M. (2021). *Accountability in education: The Nigerian experience*. African Journal of Policy and Practice in Education, 10(4), 67-85.

Osakwe, R. N. (2012). Curriculum innovation and its impacts for sustainable education in Nigeria.

Uche, O., et al. (2023). *Technology integration in rural Nigerian schools: Challenges and prospects*. International Journal of Rural Education Development, 11(2), 145-162

Ugbode, P.N. and **Adeleke, T.E.** (2021). The Role of Creativity and Innovation in the Transformation of Nigerian Higher Education in the New Normal. Journal of Sociology and Education in Africa (JOSEA), Kampala, Uganda. VOL. 18,

UNESCO (2021). *Guidelines for Integrating Sustainability into Education Systems*.

Yusuf, T. O (2021). Professional development of teachers for effective classroom practice in Nigeria.